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CHARLES ELMORE CROPLEY

IN THE

Supreme Court of the United States

OCTOBER TERM, 1941

No. 680.

U. S. INDUSTRIAL CHEMICALS, INC., *Petitioner,*

v.

CARBIDE AND CARBON CHEMICALS CORPORATION, *Respondent.*

On Writ of Certiorari to the United States Circuit Court of Appeals for the Fourth Circuit.

REPLY BRIEF FOR PETITIONER.

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PRESS OF BYRON S. ADAMS, WASHINGTON, D. C.

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The "Same Invention."

The major premise of respondent's brief is that the Lefort *reissue* patent, as well as the original patent, *makes mandatory* the voluntary introduction of some water to the reaction chamber, in addition to the water therein produced by the side reaction. This mandatory introduction respondent now finds to be satisfied by the moisture content of air.

Respondent's position is summarized at pages 17 and 18 of its brief as follows:

> "In *both* of the patents the presence in the reaction chamber of the necessary water and the necessary oxygen, *and the mandatory introduction of both*, is effected by the introduction of *air* * * *. It is apparent, therefore, that the presence of the necessary water in the reaction chamber, *as well as its introduction thereto*, is just as mandatory *in the reissue patent* as it is in the original."

This new interpretation of the patents, now brought forward for the first time, is a repudiation of the findings of the Fourth Circuit Court of Appeals, which held that (1) "the voluntary introduction of water was a mandatory provision of the original Lefort patent", and that (2) *"the reissue patent does not contemplate the voluntary introduction of water"* (R. Vol. II, page 176.).*

By thus repudiating the findings of the Circuit Court of Appeals on this crucial question, respondent seems to avoid all need to defend the erroneous procedure of that court which lies in resting its decision upholding the reissue patent notwithstanding this difference on expert testimony to the effect that the same technological result is obtained whether the additional water is used or omitted.

Respondent's brief contains no discussion of that erroneous procedure, and perhaps we may assume that silence gives consent to the point elaborated in our principal brief

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* In the Court below; respondent read the reissue patent in the same way that the Court of Appeals read it, regarding the introduction of water as optional, not mandatory in the reissue; but respondent then argued that the reissue did not differ from the original because the original also, respondent said, made the introduction of water an optional step.

In respondent's brief in opposition to the petition for certiorari in this Court, respondent's counsel said on page 5, "On the contrary, as pointed out above, the introduction of water, as distinguished from its presence, in the reaction zone is *not* 'an essential feature' in the invention at bar, and was *not* 'described and claimed in the original patent as an essential feature'."

that such procedure flies in the face of a long line of decisions of this Court.

Respondent's new interpretation of the disclosure of the reissue patent, in direct conflict with the finding of the Circuit Court of Appeals, finds no support in the decision of the trial court. The trial judge in his opinion and findings by-passed the crucial question whether the reissue patent differs from the original patent in an intention to make the voluntary addition of water optional, instead of mandatory.

Without regard to the rule of this Court that the patentee's intention is of controlling importance, the trial judge erroneously rested his decision on expert testimony "that one skilled in the art, following the teachings of the original patent, will be successful in producing what that patent calls for, and in obtaining such result whether the addition of water be considered as mandatory or as optional". (Findings 8, R. Vol. I, page 24.)

It is obvious that this test of identity, thus erroneously applied by the trial judge, and, following him, by the Court of Appeals, would have resulted in validating the reissue if applied in any of the cases discussed in our principal brief in which this Court has invalidated the reissued patent. (See our Principal Brief, pages 35-42.)

We have said that respondent's new interpretation of the original patent "seems" to avoid the necessity for discussing this error of law, but respondent's argument *only seems* to avoid that necessity. It does not avoid it in fact, because in the development of the argument respondent's counsel states (see page 14) that "whether or not claims 8 and 9 are for the same invention as that of the original patent is a simple question of *fact* on which both the District Court and the Court of Appeals are in complete accord." (Emphasis theirs.)

But the thing upon which the District Court and the Court of Appeals were in accord was not "a simple question of fact", it was an erroneous conclusion of law which resulted from the fact that both Courts, disregarding

the rule of this Court, answered the question whether the original patent and the reissue were for the same invention, not by direct comparison of the two documents to ascertain the intention of the patentee, but by reference to extraneous expert testimony as to the technological result of using or omitting to use the step which the original patent made mandatory and the reissue made optional.

Since respondent's counsel now make this new interpretation of the reissue patent the major point of their case, we make the following remarks about it:

1. If it were admitted, as it is not, that the original patent disclosed or attempted to claim a process in which the introduction of air not previously dried satisfied the mandatory requirement of the addition of water to the reaction gases, it is clear that the reissue patent does not make even that minute addition of water mandatory. In its disclosure and in its claims it definitely embraces a process in which no water is added.*

The specification and claims of the reissue patent call simply for the introduction of "molecular oxygen" to the reaction chamber. No expression could be more aptly chosen to include a process in which the oxygen is introduced in the pure, and dry, state instead of being introduced as air. The requirement of the reissue claims 8 and 9 that the reaction shall be carried out in the presence of a catalyst which favors the direct oxidation of ethylene "in the presence of water" is fully satisfied by a process in which no water whatever is added, either as liquid, steam or in the air, since the oxidation of the ethylene is accompanied by the side reaction which always assures the presence of water in the reaction zone. Thus, the reissue patent includes, and was intended to include, within its monopoly a process in which no water is introduced into the reaction chamber either as

* It is, of course, understood that in any case water is inevitably produced chemically in the reaction zone by the side reaction which accompanies the oxidation of ethylene to ethylene oxide.

moisture in the air or as steam or in the liquid state. It is precisely this enlargement of the monopoly beyond anything contemplated or intended in the original patent that makes the reissue invalid.

2. The factual assertion upon which respondent's new interpretation is predicated is that the addition of some water is essential to cause the reaction to occur, and that the moisture content of air is sufficient for that purpose. (Respondent's Brief, pages 6-7.)

Counsel say it is "a fact conceded in this case (Petitioner's Brief, p. 18; see also R. II, p. 81) that the water in air is sufficient to cause the reaction to occur," and on page 10 of their brief say "Concededly a factor *essential* to *cause* oxygen and ethylene to combine, is the *presence of water*"; and on page 15 "*In both* the original and reissue patents the necessity for the presence of water to *cause* the desired reaction is expressly recorded". (Emphasis theirs.)

There is no such concession in our brief, and the reference to Vol. II of the record at page 81 or elsewhere does not support the factual assertion. At that page Dr. Frazer said that "there must be a little water in the reactants to start the reaction, because, if the statement in the patent is true—I have never tried it—if the gases are entirely dry you get no reaction". *There is no statement* in Lefort's original patent, or in the reissue, that if the gases are entirely dry you get no reaction, and there is no evidence to that effect in the record. The patent referred to by Dr. Frazer is not identified in the record.

Indeed, as to the effect of water in the reaction zone Dr. Taylor said (R. Vol. 1, page 121) "Well, of course, one's answer to a question of that kind must be, of course, largely speculative. . . . I would say that the effect of the water resides probably in the fact that it is a partaker with the other two constituents of the sites on the surface [of the catalyst] which are available for reaction." Dr. Ryerson (R. Vol. 1, pages 135-136) testified that in his opinion ethylene oxide without aldehydes would be produced by the re-

action whether or not the entering gas mixture had been dried; and, referring to the statement of invention in the second sentence of the first paragraph of the reissue patent he said, "There is no mention of water in that particular paragraph and it mentions molecular oxygen, which in my opinion, means you could use dry oxygen. It does not have to come from the air." (R. Vol. II, p. 93) And, finally, he said that "The two patents differ in the requirement of what shall be present when the reaction occurs. The statement [referring to molecular oxygen] gives no evidence of what is happening on the catalyst surface, and that must be speculation." (R. II, p. 103). Respondent's own technical staff ran a series of tests in which neither liquid water nor steam was introduced to the chamber and in which the water vapor content of the entering gases was reduced to *two one thousandths of one per cent.* (R. Vol. II, pp. 52-53; 159). This is two thousandths of the average water vapor content of air (R. Vol. II, p. 122). The reaction is continued unaffected. (R. Vol. II, p. 159). Respondent's expert Stevenson, pointing out that the side reaction which forms water results in the presence of water in the reaction zone always, said that the main reaction always goes on "in the presence of water" but "the air can be dry". (R. Vol. II, p. 17) And again, in answer to a question by the Court, he testified that "The reaction does take place" whenever water is present "from whatever source, water occurring in the air or deliberately put in *or formed in the reaction zone on the job.*" (R. Vol. II, p. 35), and in explaining his view of the reissue patent to the Court he said "I would like to show that in the reissue patent *it is not mandatory* for the addition of water to the entering gases, *but optional.*" (R. Vol. II, p. 36, emphasis ours) Respondent's expert Curme, when asked if he knew "What takes place at the surface of the catalyst when you have present ethylene, oxygen and a large proportion of steam" said "From the standpoint of actual knowledge, no one knows. There are many engaging theories . . . but . . .

there is no absolute knowledge on this subject." (R. Vol. II, p. 63)

3. The original patent nowhere mentions the water vapor content of air and nowhere states that the moisture content of air is effective in the process in any degree. The patent thus contains no disclosure of the basic fact on which respondent's theory rests.

Respondent attempts to read the expression "oxygen of air and of water" in the original patent as though it read "oxygen and water of air" (Respondent's Brief, pp. 6 and 19). It *does not* read that way, and to change it in that way would be a departure from the original disclosure in the direction of new matter, which the reissue statute forbids.

The patent states that the forms in which water can be introduced to the reaction chamber "are either in the liquid state, or as steam" (1/2/11). In perfect conformity with this statement, wherever water is referred to in the patent it is referred to in one of these forms. There is no mention in the original patent, either in the specification or in the claims, of a process in which the mixture subjected to contact with the catalyst in the reaction chamber is a mixture of ethylene and air only. On the contrary, wherever it is directed that air be introduced to the reaction chamber it is directed that water in the liquid state or as steam must be introduced as well. (See our Main Brief, pp. 5-10 and 22-3.)

4. The patent nowhere discloses the possible utility of water in the minute quantities which constitute the moisture content of air. On the contrary, it indicates that the introduction of water in substantial quantities is required. Thus, in *Modus Operandi I*, the reaction chamber communicates with a *circulating pump* which introduces water under pressure to the tube where the reaction takes place "between ethylene, the oxygen of air, and water" (2/1/5-25). Similarly in *Modus Operandi III* it is directed that the reaction tube be "filled with water" (2/1/42).

Evidence in the record discloses the same fact. Before respondent acquired the Lefort patent, the Royal Dutch Shell Company spent months investigating the process with a view to purchase. In their investigation they had the cooperation of the French company to whom all the Lefort patents had issued. The process was performed in the French company's laboratories for the instruction of Dutch Shell's technical representatives. In all cases large amounts of steam were introduced to the reaction chamber, never running lower than *50 per cent of the total mixture of gases* (R. Vol. I, p. 49).

5. Finally, petitioner takes the position "That there is complete identity of the invention *claimed* by the original patent and that recited in claims 8 and 9 of the reissue" (page 15) and that "The *only* difference between them is a change in the designation of the catalyzer" (page 16).

We think it will be very difficult for respondent's counsel to convince this Court that the subtle and ingenious wording of the reissue claims 8 and 9 was intended only to monopolize for the owner of the patent the use of a particular class of catalysts, regardless of the voluntary addition or omission of water.

If that had been the purpose of the reissue, respondent could have achieved it by adding to the original patent a claim exactly like original claim 1 with the substitution for the words "a catalyst, constituted by silver activated by introducing in the body small quantities of metal selected from a group consisting of gold, copper and iron" of the original claim, the words of reissue claim 8, "an active surface catalyst of a material having the catalytic characteristics of silver which favors the direct oxidation of said ethylene in said mixture by said molecular oxygen to form oxidation products containing ethylene oxide in the presence of water and which does not favor the existence in said products of substantial amounts of aldehydes."

Such a substitution would have achieved the purpose of broadly defining the catalyst, which respondent now pre-

tends to be the purpose of the reissue, but it would have left the voluntary introduction of water as it was defined in the original specification and in the words of the original claim "subjecting ethylene to the simultaneous action of oxygen and water, in the presence of a catalyst", etc.

The evident purpose and effect of the reissue was, as the Court below held, to make the voluntary addition of water which was mandatory in the original, optional in the reissue. This the law does not permit.

We submit, therefore, that the Court below correctly held that the original patent contemplated the voluntary introduction of water into the reaction chamber, not as an optional procedure, but as a step that would always be taken, that the reissue patent does *not* contemplate the voluntary introduction of water into the reaction chamber as a necessary procedure, and that claims 8 and 9 of the reissue patent contain no such requirement. In the light of these facts, and under the well-settled rules of this Court, the patent in suit is invalid as a matter of law.

Idealization of the Original Disclosure.

Pages 2 and 3 and the first sentence on page 4 of respondent's brief are directed to assertion of the great importance of a chemical process by which "the direct oxidation of ethylene with oxygen" is achieved. This is said to be an achievement the desirability of which has been recognized for years and the reissue patent in suit is referred to as "The patent . . . for the invention which made this 'impossible' thing a *fait accompli.*"

There is not, however, a word in the original Lefort patent about the direct oxidation of ethylene with oxygen, and no suggestion that that is the achievement which Lefort intended to patent. Indeed, these portions of respondent's brief are, it seems to us, a full exposé of that ambitious scheme of respondent's which was first manifested in the reissue patent itself—the scheme

to expand and idealize the subject matter patented, after the issuance of the original patent, so as to embrace subject matter which Lefort did not originally evidence any intention to monopolize, and which in the interim had been put into use by others. It is a perfect example, we submit, of that abuse of the reissue statute which it was the purpose of this Court, in *Miller* v. *Brass Company*, 104 U. S. 350, to put an end to. (See *Sontag, etc.* v. *National, etc.* May 20, 1940, 310 U. S. 281; pages 289 and 293.)

Intervening Rights.

The respondent, with reference to petitioner's point that substantial investment, amounting to over $100,000, in experimental work which ultimately resulted in a commercial operation should be protected by the doctrine of intervening rights, emphasizes that this is "a novel proposition of law".

It is, as we pointed out in our main brief, a question of first impression in this Court, and the argument of our brief is that effort and money expended in this degree by "innocent parties" to use the language of this Court in the *Sontag* case (310 U. S. 281 at pages 293-4) should be included within the shelter of the "sense of justice and policy" referred to in that case (page 295).

Respondent's counsel in their brief say (page 24) that "for obvious reasons, the doctrine necessarily is limited" to "*commercial operations.*" We do not think so.

We think the fact that petitioner undertook further expenditures in building its commercial plant after the reissue had been granted in reliance on the estoppel raised by its intervening labors has no relevance to this question. The actual cash expenditures of petitioner upon the work carried out prior to the application date of the reissue amounted to $132,000. (R. Vol. I, p. 226). We believe that in view of the substantial nature of these expenditures and the scope and extent of the work done prior to the application date of the reissue, intervening rights had already accrued to petitioner as of that date.

But even if the experimental nature of the work carried on by petitioner prior to the application date of the reissue should be discounted because of its character, this objection was removed by the further developments in the period preceding the date upon which the reissue patent was granted. Prior to that date the period of experimentation and development came to an end, the process was completed and application for patent on the perfected invention was filed (R. Vol. I, pp. 217, 224-5). Petitioner here appears not as an intervening *experimenter*, but as an *intervening inventor*.

The rights of an intervening inventor were expressly mentioned by this Court in the *Sontag* case (Petitioner's Brief, p. 51; 310 U. S. at pages 294 and 295), and apparently respondent does not question these rights, for on this branch of the case respondent's only objection is that the period of intervention is limited by the application date of the reissue; not its date of grant (Respondent's Brief, p. 25).

We believe that respondent's point is ill taken. Respondent asserts that it is an absolute rule that intervention subsequent to the date of application for a reissue will not be recognized by the courts. This statement is not justified. It is true that in the majority of cases that have been litigated the facts established intervention as occurring prior to the application for reissue and consequently the date of grant has received infrequent mention in the decided cases. However, in two of the leading cases on this subject, the date of grant of the reissue was treated as the critical date (*Autopiano Co.* v. *American Player Action Co.*, 222 Fed. 276, 282; *A. Liley et al.* v. *Samuel C. Tatum Co.*, 240 Fed. 979, 982), and in a recent decision of the Court of Appeals for the Second Circuit—the Court in which issues of patent law arise more frequently than in any other in the country—it was asserted (*Otis Elevator Company* v. *Atlantic Elevator Company*, 47 F. (2d) 545, 549):

"In the first place, the critical date should certainly be that of the re-issue itself, not of the application, since the application is not published."

We think that in reason and in principle this proposition is correct.

The public is not informed either actually or constructively of the filing of the application for a reissue. For all purposes the original patent stands as the sole declaration of the patent owner's rights until the actual grant of the reissue. Even after application for reissue has been filed, the original patent remains in force, and if the application is rejected, continues to determine the rights of the patent owner. Since applications for reissue are frequently rejected, even the applicant himself cannot know until the actual date of grant what additional rights he may secure. For the public, who are without knowledge of the applicant's efforts to enlarge his monopoly, the original patent remains the definitive statement of its owner's rights until the reissue patent has been published by the Patent Office.

Nor has the public any reason to believe that reissue will be sought, nor any duty to anticipate such action on the part of the patent owner. In this connection it is to be borne in mind that the right to reissue with broadened claims is a very special and exceptional one. (*Miller* v. *Brass Co.*, 104 U. S. 350 at pp. 354-5; *Mahn* v. *Harwood*, 112 U. S. 354 at p. 362; *Sontag* v. *National*, 310 U. S. 281 at pp. 289-290) There is no presumption that a patent can be so reissued (*Ashland Fire Brick Co.* v. *General Refractories Co.*, 27 F. (2d) 744, 746; C. C. A. 6). The presumption, on the contrary, is that what has not been claimed in the patent is public property (*Mahn* v. *Harwood*, 112 U. S. 354, 361, and *Parker & Whipple Co.* v. *Yale Clock Co.*, 123 U. S. 87, 102); and that if the patentee described and claimed only a part of his invention, the residue has been abandoned to the public (*McClain* v. *Ortmayer*, 141 U. S. 419, 423-4; *Deering* v. *Winona Harvester Works*, 155 U. S. 286, 296). The public has a right to rely on these presumptions and accept the limita-

tions of the patent as final until the inventor's exceptional right to reissue has been made complete by the grant of a reissue patent.

It is not suggested in this case that petitioner had notice of the application for reissue. Petitioner simply continued its efforts in innocence of respondent's change of position and in reliance upon the limitations of the original patent. Those efforts came to fruition before the reissue was granted and before notice of respondent's new claims reached petitioner. We submit that there can be no doubt that petitioner's intervening rights vested as of that date if not before.

Respectfully submitted,

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